We Claim:

1. A method of establishing a wireless communication path between a first device and a second device, the method comprising the steps of:

automatically positioning a self-positioning wireless transceiver system within communication range of a first device and a second device;

establishing communicative coupling between the self-positioning wireless transceiver system and the first device; and

establishing communicative coupling between the self-positioning wireless transceiver system and the second device while maintaining communicative coupling with the first device.

2. The method of claim 1, wherein the self-positioning wireless transceiver system comprises a first self-positioning transceiver.

3. The method of claim 1, wherein the self-positioning wireless transceiver system comprises first and second self-positioning transceivers.

4. The method of claim 3, further including a step of transmitting data from the first self-positioning transceiver to the second self-positioning transceiver via at least one of radio frequency, infrared frequency and ultrasonic frequency communication channels.

5. The method of claim 4, wherein the step of transmitting data further includes transmitting self-positioning transceiver operational data via a control channel and transmitting communication data via a payload channel.

6. The method of claim 4, wherein the step of transmitting data further includes transmitting at least one of voice data, text date, image data, video data and audio data.

7. The method of claim 1, wherein the self-positioning transceiver system operates in accordance with one of Bluetooth, IEEE 802.11, IEEE 802.11a, IEEE 802.11b and IEEE 802.11g industry specifications.

8. The method of claim 2, wherein the first self-positioning transceiver further comprises a mobility mechanism.

9. The method of claim 8, wherein the mobility mechanism comprises one of a flying mobility mechanism, a hovering mobility mechanism, a swimming mobility mechanism, and a crawling mobility mechanism.

10. The method of claim 8, wherein the mobility mechanism comprises one of a land-craft, aircraft and watercraft that is responsive to a wireless communication signal.

11. The method of claim 1, wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers, the method further including a step of deploying the plurality of self-positioning transceivers in a pre-defined configuration.

12. The method of claim 1, wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers, the method further including a step of deploying the plurality of self-positioning transceivers in a pre-defined swarm configuration.

13. The method of claim 1, wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers, the method further including a step of deploying the plurality of self-positioning transceivers to search for a signal transmitted by the second device in pre-defined searching pattern.

14. The method of claim 1, wherein the self-positioning wireless transceiver system comprises first and second pluralities of self-positioning transceivers, the method further including the steps of employing the first plurality of self-positioning transceivers to communicatively couple the first device to the second device and employing the second plurality of self-positioning transceivers to create a second communication path adapted to communicatively couple the first device to the second device.

15. The method of claim 1, wherein the self-positioning wireless transceiver system comprises first, second and third self-positioning transceivers, the method further including the step of the second self-positioning transceiver automatically positioning itself with respect to the first and third self-positioning transceivers such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the third self-positioning transceiver are approximately equal.

16. The method of claim 1, wherein the self-positioning wireless transceiver system comprises first and second self-positioning transceivers, the method further including the steps of:

positioning the first self-positioning transceiver positioning within communication range of the first device;

establishing communicative coupling between the first transceiver and the first device;

if the signal received from the second device is less than a first threshold, issuing a request to a second self-positioning transceiver for support;

positioning the second self-positioning transceiver within communication range of the first self-positioning transceiver and the first device;

establishing communicative coupling between the second self-positioning transceiver and the first device;

establishing communicative coupling between the second self-positioning transceiver and the first self-positioning transceiver;

positioning the first self-positioning transceiver a predefined incremental distance toward the second device; and

positioning the second self-positioning transceiver with respect to the first self-positioning transceiver and with respect to the first device such that the quality of a first communication signal received from the first self-positioning transceivers and the quality of a second communication signal received from the first device are approximately equal.

17. The method of claim 16, wherein the first threshold is one of a primary pre-defined threshold, a pre-defined backup threshold and a dynamically determined threshold.

18. The method of claim 1, wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers wherein a subset of the plurality of self-positioning transceivers are communicatively coupled to create a communication link from the first device to the second device, the method further including the steps of:

detecting a movement of the first device relative to the position of the second device;

positioning the first self-positioning transceiver of the subset of self-positioning transceivers repositioning to remain within communication range of the first device;

repositioning each of the subset of self-positioning transceivers communicatively coupling the first self-positioning transceiver to the second device with respect to a neighboring self-positioning transceiver such that the quality of each communication signal received by each of the subset of self-positioning transceivers from a neighboring self-positioning transceiver are approximately equal;

if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is less than a first threshold, issuing a request to a second self-positioning transceiver for support and

if the quality of a signal received by at least one of the subset of self-positioning transceivers from a neighboring self-positioning transceiver is greater than a second threshold, issuing a request to one of the subset of self-positioning transceivers to communicatively decouple itself from the first device, the second device and the other self-positioning transceivers of the subset of self-positioning transceivers.

19. The method of claim 18, wherein the first threshold is one of a primary pre-defined threshold, a backup pre-defined threshold and a dynamically determined threshold.

20. The method of claim 1, wherein the self-positioning wireless transceiver system comprises a plurality of self-positioning transceivers wherein the plurality of self-positioning transceivers are communicatively coupled to create a communication path between the first device and the second device, the method further including the steps of:

detecting that the configuration of the plurality of communicatively coupled self-positioning transceivers is in a crossover configuration;

identifying a relatively shorter communication path defined by a subset of the plurality of self-positioning transceivers; and

issuing a command to the plurality of self-positioning transceivers that are not a member of the subset to communicatively decouple themselves from the first device, the second device and the subset of the plurality of self-positioning transceivers.

21. The method of claim 1, wherein the self-positioning wireless transceiver system comprises a plurality of communicatively coupled self-positioning transceivers further including the steps of:

detecting a termination of communicative coupling between the first device and the second device; and

retrieving the plurality of self-positioning transceivers.

22. The method of claim 21, further including the steps of:

(i) determining that a predetermined period has passed without the detection of a need to form a communication link between the first device and the second device;

(ii) initiating a search for a homing signal generated from a home location;

(iii) searching for the homing signal;

(iv) if the homing signal is detected, following the homing signal to the home location;

(v) if the homing signal cannot be detected, at least one of the plurality of self-positioning transceivers positioning itself an incremental distance away from a reference position to search for the homing signal; and

(vi) repeat steps (iii) through (v) until the homing signal is detected.

23. The method of claim 22, further including the step of if a predetermined period of time has elapsed since the execution of step (ii), issuing a request for help in locating the homing signal.

24. The method of claim 21, further including the steps of:

(i) issuing a retrieve command to the plurality of self-positioning transceivers;

(ii) each of the plurality of self-positioning transceivers positioning itself closer to a neighboring self-positioning transceiver in the approximate direction of the first device;

(iii) identifying a self-positioning transceiver of the plurality that is directly communicatively coupled to the first device;

(iv) communicatively decoupling the identified self-positioning transceiver from the other of the plurality of self-positioning transceivers and from the first device;

(v) repeat steps (ii) through (iv) until the plurality of self-positioning transceivers have been communicatively decoupled from the first device.

25. A method of increasing the communication range of a first device, the method comprising the steps of:

providing a plurality of self-positioning transceivers, each of the plurality of self-positioning transceivers including a mobility mechanism adapted to enable each of the plurality of self-positioning transceivers to automatically position itself;

each of the plurality of self-positioning transceivers automatically positioning itself with respect to the first device; and

establishing communicative coupling between each of the plurality of self-positioning transceivers and the first device.

26. The method of claim 25, further including the steps of:

each of a first subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of the first device;

establishing communicative coupling between the first subset of the plurality of self-positioning transceivers and the first device;

each of a second subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of at least one of the first subset of the plurality of self-positioning transceivers; and

establishing communicative coupling between each of the second subset of the plurality of self-positioning transceivers and the first device via at least one of the first subset of the plurality of self-positioning transceivers.

27. The method of claim 26, wherein the step of the first subset of the plurality of self-positioning transceivers automatically positioning itself within communication range of one of the first device further includes the steps of:

a first self-positioning transceiver receiving a first communication signal directly from a first neighboring self-positioning transceiver;

the first self-positioning transceiver receiving a second communication signal directly from a second neighboring self-positioning transceiver;

the first self-positioning transceiver automatically positioning itself with respect to the first and second neighboring self-positioning transceivers such that the quality of the communication signals received from the first and second neighboring self-positioning transceivers are approximately equal.

28. The method of claim 25, wherein the step of providing a plurality of self-positioning transceivers further comprises providing a plurality of self-positioning transceivers including a mobility mechanism comprising one of a flying mechanism, a hovering mechanism, a swimming mechanism and a crawling mechanism.

29. The method of claim 25, wherein the step of providing a plurality of self-positioning transceivers further comprises providing a plurality of self-positioning transceivers including a mobility mechanism comprising a micro-mechanical flying insect robot.

30. The method of claim 25, wherein the plurality of self-positioning transceivers includes a first subset of self-positioning transceivers and the method further includes the step of communicatively coupling the first device to a second device via the first subset of communicatively coupled self-positioning transceivers.

31. The method of claim 30, wherein the plurality of self-positioning transceivers includes a second subset of self-positioning transceivers and the method further includes the step of creating a first alternate communication path between the first device and the second device via the second subset of communicatively coupled self-positioning transceivers.

32. The method of claim 31, wherein if at least one of the first subset of self-positioning transceivers experiences a malfunction, establishing communicative coupling between the first device and the second device via the first alternate communication path.

33. The method of claim 30, wherein the plurality of self-positioning transceivers includes a second subset of self-positioning transceivers and the method further includes the step of if the strength of a communication signal received by one of the first and second devices falls below a predefined threshold, the second subset of the communicatively coupled self-positioning transceivers automatically positioning themselves to maintain communicative coupling between the first device and the second device.

34. The method of claim 33, wherein the plurality of self-positioning transceivers includes a third subset of self-positioning transceivers and the method further includes the step of the third subset of the communicatively coupled self-positioning transceivers automatically positioning themselves to create a second alternate communication path between the first device and the second device.

35. A self-positioning transceiver adapted to provide communicatively coupling between a first device and a second device, the self-positioning transceiver system comprising:

a transmitter;

a receiver;

a mobility mechanism adapted to carry the transmitter and the receiver; and

a processor communicatively coupled to the transmitter, the receiver and the mobility mechanism, the processor being adapted to operate in accordance with a computer program embodied on a computer-readable medium, the computer program comprising:

a first routine that directs processing of communication data received from the first device via the receiver;

a second routine that directs transmission of the communication data received from the first device to the second device via the transmitter; and

a third routine that issues a position command to the mobility mechanism based on the quality of a signal received by the receiver from the first device and based on the quality of a signal received by the receiver from the second device.

36. The self-positioning transceiver of claim 35, wherein the combination of the transmitter and the receiver comprise a transceiver.

37. The self-positioning transceiver of claim 37, wherein the mobility mechanism comprises one of a flying mechanism, a hovering mechanism, a swimming mechanism and a crawling mechanism.

38. The self-positioning transceiver of claim 35, wherein the mobility mechanism comprises one of a land-craft, aircraft and watercraft that is responsive to a wireless communication signal.

39. The self-positioning transceiver of claim 35, wherein the transmitter is adapted to transmit communication data to one of a source device, a destination device and a neighboring self-positioning transceiver.

40. The method of claim 35, wherein the transmitter is adapted to transmit a signal in accordance with one of Bluetooth, IEEE 802.11, IEEE 802.11a, IEEE 802.11b and IEEE 802.11g industry specifications.

41. The self-positioning transceiver of claim 35, wherein the receiver is adapted to receive communication data from one of a source device, a destination device and a neighboring self-positioning transceiver.

42. The self-positioning transceiver of claim 35, further including a random access memory for maintaining self-positioning transceiver operational data.

43. The self-positioning transceiver of claim 35, further comprising a fourth routine that issues the position command to the mobility mechanism in accordance with a pre-defined search pattern.

44. The self-positioning transceiver of claim 35, wherein the transmitter transmits self-positioning transceiver operational data to a neighboring self-positioning transceiver via a control channel and communication packet data via a payload channel to one of a source device, a destination device and a neighboring self-positioning transceiver.

45. The self-positioning transceiver of claim 35, wherein the transmitter is adapted to transmit communication data via at least one of radio frequency, infrared frequency and ultrasonic frequency communication channels.

46. The self-positioning transceiver of claim 35, further including a fourth routine that directs a periodic monitoring of the communication link quality between the self-positioning transceiver and a neighboring self-positioning transceiver.

47. The self-positioning transceiver of claim 46, further including a fifth routine that maintains an aggregate communication link quality based on communication link quality data received from a plurality of self-positioning transceivers, the plurality of self-positioning transceivers being communicatively coupled to the self-positioning transceiver.

48. The self-positioning transceiver of claim 47, further including a sixth routine that issues a command to the mobility mechanism to reposition the self-positioning transceiver closer to the neighboring self-positioning transceiver if the communication link quality between the self-positioning transceiver and the neighboring self-positioning transceiver falls below the aggregate communication link quality by a pre-defined threshold.

49. The self-positioning transceiver of claim 47, further including a sixth routine that issues a command to the mobility mechanism to reposition the self-positioning transceiver further away from the neighboring self-positioning transceiver if the communication link quality between the self-positioning transceiver and the neighboring self-positioning transceiver exceeds the aggregate communication link quality by a pre-defined threshold.